UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

October 24, 2014

Mr. Tim Kuhn
U.S. Army Corps of Engineers, Portland District
P.O. Box 2946
Portland, Oregon 97208-2946
Attn: CENWP-PM-F/Mount St. Helens Draft SEIS

Re: Mount St. Helens Long-Term Sediment Management Plan Draft Supplemental Environmental Impact Statement. EPA Region 10 Project Number 84-193-COE

Dear Mr. Kuhn:

The U.S. Environmental Protection Agency has reviewed the Draft Supplemental Environmental Impact Statement for the Mt. St. Helens Long Term Sediment Management Plan. We are submitting comments in accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act. Thank you for the opportunity to comment on the proposed action.

In order to manage flood risk to congressionally established levels for the cities of Castle Rock, Lexington, Kelso, and Longview, Washington through the year 2035 as authorized by the Water Resources Development Act of 2000, the U.S. Army Corps of Engineers is proposing further means to manage sediment from the Mt. St. Helens eruption of 1980. Because the Sediment Retention Structure built in response to the 1980 eruption has reached capacity and is currently operating as run-of-the-river, the Corps is proposing further means to manage sediment to achieve flood risk reduction levels established by Congress. Since the SRS was constructed in 1989, the Corps has dredged the lower 5.7 miles of the Cowlitz River, (2007-2008), constructed a cutoff wall to protect levees in Castle Rock (2009), constructed pilot Grade Building Structures (GBS) within the sediment plain (2010), and constructed an interim 7-foot raise of the SRS spillway crest to increase sediment trapping and maintain authorized level of protection (LOP) while the long-term planning efforts were conducted (2012).

In addition to the No Action Alternative, the Corps proposes three action alternatives: the Dredging Only Alternative, which would dredge the lower Cowlitz River only; the SRS Raise Alternative, which would construct a one-time raise of the SRS spillway by 43 feet and the SRS dam by 30 feet; and the Phased Construction Alternative (Preferred Alternative), which would construct two incremental raises of the MSH SRS spillway totaling 23 feet, additional GBS construction, and lower Cowlitz River dredging as needed.

We commend the Corps for their involvement of regional agencies, local government, and the Cowlitz Tribe during the planning period through the formation of a Technical Agency/Government Team (TAGT). The TAGT was to provide a forum for information exchange to address sediment management concerns and potentially contribute to the restoration of the ecosystem. The EPA would appreciate additional involvement in the TAGT as the Final SEIS is developed.

Based on the information provided, we are rating the DSEIS as EC-2, Environmental Concerns, Insufficient Information. An explanation of this rating is enclosed. Our main concerns and information needs are stated briefly below. The enclosed detailed comments provide further discussion.

- With agency and tribal partners, to the extent possible, address ecosystem restoration (such as, but not necessarily limited to, providing volitional fish passage) concurrently with the development and implementation of the sediment management plan.
- If there is consensus among agency and Tribal partners that the Fish Collection Facility should be retained, at least for the time being, provide remedial mitigation and adaptive management to address the existing problems with fish passage at the FCF.
- Prior to and together with monitoring, collaboratively establish clear mitigation goals and objectives, and include in the Final SEIS substantive mitigation commitments responsive to the needs and recommendations of affected resource agencies and the Cowlitz Tribe.
- Disclose specifically how the Corps would contribute to the recovery of threatened, endangered and candidate Federal and State species and critical habitats, protect and sustain State Priority Habitats and Species, and other special status species that have been and/or would be negatively affected by the MSH SRS, Spillway Crest Raises, and associated actions and components. Species for special focus include, but are not necessarily limited to, LCR coho, LCR steelhead, Pacific eulachon, MSH elk, Western toad and other amphibians, and Special Status plants.
- Conduct surveys for amphibians, such as Western toad and other species of concern that would potentially be affected by the Spillway Crest Raises and consult with WDFW and USFWS regarding additional conservation measures for species found.
- Conduct a thorough survey for Special Status Plant species within the area of potential impact and coordinate with Washington DNR Natural Heritage Program regarding plant salvage for any species found.
- Consider providing mitigation for old growth forest that would be lost.
- Provide further information and assessment of water temperature impacts due to ponding from the SRS and Spillway Crest Raises and resulting effects on 303(d) listed water bodies/water quality, ESA-listed fish and fish habitat.
- Evaluate and report results in the Final SEIS of the effects and effectiveness of the pilot Grade Building Structures and other constructs within the sediment plain (such as the River Diversion Berm and the Cross-valley Structure). As future GBS are designed and constructed, ensure that resulting sediment deposition would not impair channel integrity at the confluence of Hoffstadt Creek with the NF Toutle River. Explore means to maintain channel integrity and fish passage at Alder Creek.
- Provide more information regarding Deer Creek and its potential for use as a release site for fish from the FCF. Identify any other tributaries suitable for this purpose upstream of the SRS and the N-1 structure.
- Factor climate change predictions/trends into projections of the probability and magnitude of future floods, associated sediment movement and deposition.
- Address prevention and management of invasive species occurrence due to past and current proposed actions.
- In the Final SEIS, include additional information regarding sediments and dredging per our enclosed comments.

Thank you for the opportunity to offer comments on the Mt. St. Helens Long Term Sediment Management Plan DSEIS. If you have questions or need further information, please contact me at

(206)553-1601 or via electronic mail at reichgott.christine@epa.gov, or contact Elaine Somers of my staff at (206)553-2966 or via electronic mail at somers.elaine@epa.gov.

Sincerely,

Eric Peterson for

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

Enclosures

U.S. Environmental Protection Agency
Detailed Comments on the
Mt. St. Helens Long Term Sediment Management Plan Draft SEIS

Ecosystem Restoration

We note that the subject of ecosystem restoration in the North Fork Toutle has, thus far, been treated as a separate issue and that efforts to address it have been suspended due to lack of local sponsorship and funds[1]. While the Corps' mandate is to provide authorized Level of Protection for downstream communities, and the proposed actions would not preclude future provision of volitional fish passage, it seems counterproductive to plan for long-term sediment management without concurrently planning for restoration. In concert with resource agencies, governmental entities, and the Cowlitz Tribe, we believe that there should be active and ongoing discussions of restoration needs and goals to inform and integrate with sediment management plans and mitigation. Insofar as possible, we encourage that this be done. These discussions should include, but not be limited to, re-establishment of volitional fish passage within the North Fork Toutle River system.

Recommendation: Integrate ecosystem restoration and sediment management planning as discussed above.

Mitigation Needs

Fish Passage/Fish Collection Facility. We agree with the Corps' statements in the DSEIS (p. 4-110) that "The existing SRS has adversely affected upstream fish passage on the NF Toutle River, contributing to the cumulative effect of past actions on anadromous fish." We also agree with the USFWS[2] that the Corps must fairly and objectively consider and act to meaningfully address long standing fish and wildlife concerns. In response the Corps does indicate that "Potential mitigation measures proposed by USACE to address baseline conditions and anticipated future changes upstream of the SRS would enhance existing fish passage and outplanting." Conversely, however, the Corps also states (DSEIS, p. 5-1) that "No mitigation is proposed for the No Action Alternative because impacts from the original construction of the SRS were mitigated at the time of construction and no new actions are proposed."

We are concerned with this perspective because the mitigation provided the original SRS has not performed in accordance with reasonable expectations. We refer, in particular, to the Fish Collection Facility, its limited functionality and poor operating condition. Whether the FCF is repaired, redesigned, replaced, or removed in favor of providing volitional fish passage, a good faith effort on the part of the Corps is needed to adaptively manage the mitigation to achieve intended results. This should be done in collaboration with agency, tribal, and other government partners. The current proposed action to continue management of MSH sediment provides an opportunity to remedy ineffective mitigation from construction of the original SRS[3], to monitor and apply results to inform future mitigation, as well as to provide mitigation for additional impacts. Any future mitigation commitments should be made with the understanding that they would be monitored and adaptively managed to achieve specified results. In the

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[1] USFWS Fish and Wildlife Coordination Act Planning Aid Letter to USACE for MSH Sediment Management for Flood Risk Reduction, Toutle and Cowlitz River Basins, Cowlitz County, WA; August 29, 2013.
[2] USFWS Fish and Wildlife Coordination Act Planning Aid Letter to USACE for MSH Sediment Management for Flood Risk Reduction, Toutle and Cowlitz River Basins, Cowlitz County, WA; August 29, 2013.
[3] CEQ Mitigation and Monitoring Guidance under NEPA, January 21, 2011. Federal Register Vol. 76, No. 14.

event that intended results are found to be unachievable, there should be a contingency plan to provide suitable, agreed to, alternative mitigation[4].

Recommendations:

- In collaboration with agency, governmental, and tribal partners, identify specific mitigation goals and objectives for fish passage. Provide the needed mitigation, monitoring, and adaptive management, to achieve effective fish passage from the Lower to the Upper North Fork Toutle River, prior to or concurrent with the new proposed action.
- As discussed above, include ecosystem recovery as part of the mitigation discussions, identifying key recovery needs and goals, and commit to establishing strategies and timelines for achieving them.
- Evaluate the sediment deposition at Pullen Creek, which has caused the two channels to become ponded and effectively block fish passage between the NF Toutle River and Pullen Creek (p. 3-59), for possible means to alleviate or mitigate this blockage.

Mitigation for New Major Adverse Impacts. We are concerned that the primary mitigation the Corps is proposing for major adverse impacts to wetlands and vegetation, elk habitat, fish, and fish passage is to implement monitoring to evaluate potential changes in the condition of adversely affected resources over time (p. 5-1). The Corps would then consider additional feasible measures to mitigate impacts that the Corps believes warrant mitigation. While we agree that monitoring is essential, it should be accompanied by more robust and tangible mitigation measures to address existing degradation and additional impacts that are projected to occur.

Many species have become listed under the Endangered Species Act since the SRS was constructed. Consequently, a key focus for the Corps' mitigation should be upon how the Corps can most contribute to the recovery of listed species, and how they can best prevent further declines of other species of concern. The need for and nature of mitigation measures are best determined through consultation with resource agencies, such as, WDFW, the Services, land management entities, and the Cowlitz Tribe.

Recommendations:

- In addition to monitoring, provide substantive mitigation commitments responsive to the needs and recommendations of affected resource agencies and the Cowlitz Tribe.
- In the Final SEIS, discuss specifically how the Corps would contribute to the recovery of listed Federal, State, and candidate species and critical habitats, protect and sustain State Priority Habitats and Species, and other sensitive and special status species that have been and would continue to be negatively affected by the MSH SRS and associated components. At a minimum these should include, but not necessarily be limited to, LCR coho, LCR steelhead, Pacific eulachon, Western toad and other amphibians, MSH elk (see additional comments below), and Special Status plants.

Elk and Elk Habitat. The current affected environment for the MSH Elk Herd is that "The reduction in prime forage habitat within much of the wildlife area has been a contributing factor in periodically large numbers of winter elk mortalities in the area" (p. 3-44). The elk are facing further habitat loss to residential and urban development within historical habitat and are also suffering from hoof disease.

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[4] CEQ Mitigation and Monitoring Guidance under NEPA, January 21, 2011. Federal Register Vol. 76, No. 14: Appendix: Department of the Army Mitigation Regulations and Guidance.

WDFW has been working to establish forage vegetation, which grows with greatest success in the more stable areas, such as where wetlands have established on the sediment plain. The additional habitat losses due to the proposed action would further diminish available habitat for decades due to the renewed disturbance to the sediment plain and inundation of newly established wetland habitat that provides important elk forage (p. 3-44). As a result, the statement (p. 4-110) that the action alternatives would not incrementally change the cumulative effects and would not noticeably change the environmental conditions that result from past, present and reasonably foreseeable future actions is not supported, particularly when the proposed action would continue the de-stabilizing actions (inundation by water and sediment) that prevent vegetation establishment in the sediment plain and riparian areas.

Based on these conditions, we are concerned there are no substantive mitigation commitments provided for elk and elk habitat in the DSEIS. The Corps states (p. 5-5) that permanent impacts to elk habitat within the water impoundment area would be mitigated for either concurrently with or immediately post construction of the SRS Raise, but provides no information regarding the nature of the mitigation or the likelihood that it could be implemented. Impacts to elk habitat within the area affected by sediment deposition would be monitored, with mitigation implemented as necessary in collaboration with WDFW. This would entail monitoring at years 3 and 5 post-construction of Phase 1 spillway crest raise, and in years 3, 5, and 7 post-construction of Phase 2 spillway crest raise, and in years 3 and 5 post-construction of Phase 3 GBS to observe elk habitat impacts. However, the current condition of elk and elk habitat is apparently too degraded to experience the additional project-induced forage and habitat losses with no mitigation for an indefinite number of years.

Recommendation: In consultation with WDFW, commit to substantive mitigation to offset the projected habitat losses due to both water and sediment inundation in advance of or concurrent with project implementation. Include adequate mitigation to compensate for temporal losses as well.

Western toad, other amphibian species of concern. Several amphibian species of concern are known to inhabit the project area and have been found on recent field visits. Based on their habitat characteristics, we would expect that all or most of them could be negatively affected by the Spillway Crest Raises. These include Western toad (Federal species of concern and State candidate species), tailed frog (Federal species of concern and State monitor species), Cascade torrent salamander (State monitor species), Northern red-legged frog, and Pacific tree frog. Baseline surveys should be conducted to determine presence, numbers, and important/high value habitats that would be affected by the proposed actions. WDFW and USFWS should be consulted regarding potential actions that could be taken to protect and conserve these habitats and species, including translocation of individuals to suitable habitats outside the projected areas of impact.

Recommendations: Conduct amphibian surveys and consult with WDFW, USFWS and other experts regarding potential mitigation measures, such as translocation of individuals to suitable habitats.

Special status plant species. We appreciate the discussion in the DSEIS of the specific Federal and State endangered, threatened, and sensitive plant species that potentially occur in the project area. It is unclear whether or not a thorough plant survey has been conducted in the area of potential impact, though the DSEIS does state that none are known to exist in the impact areas. During the site visit in April 2013, we noted the presence of *Corydalis caseana* (Clackamas Corydalis) along the hiking trail to the SRS, and would therefore convey that this species could potentially be found within the area of

impact. A thorough survey for special status plants should be conducted at appropriate times during the growing season. Special status species located in the impact area should be salvaged and replanted.

Recommendation: Conduct a thorough survey for special status plants within the project impact area. Salvage and consult with Washington DNR Natural Heritage Program regarding managing/transplanting any that are found.

Old growth forest. The DSEIS does not address mitigation for loss of old growth forest in the Alder Creek area. Based on the information provided in the DSEIS, old growth is apparently rare or very limited in the project area. While it cannot be readily reproduced, there are means to lessen the losses. Purchase and management of mature timber stands for old growth characteristics and/or protection through fee purchase of other off-site old growth stands should be considered.

Recommendation: Consider mitigation for loss of old growth forest at Alder Creek due to inundation.

Invasive species. Ongoing disturbance in the project area creates an opportunity for establishment of non-native invasive species. We note that control of noxious weeds is a management issue for WDFW within the MSH Wildlife Area. In accord with Executive Order 13112, the SEIS should discuss these conditions and effects and include mitigation to prevent or control invasives.

Recommendation: In the Final SEIS, include a segment on invasive species, which describes the affected environment, environmental consequences, and mitigation.

Monitoring

The DSEIS provides little information regarding the proposed monitoring of mitigation (e.g., for wetlands). Having participated in the baseline wetlands inventory/assessment for the proposed project, EPA found that the surveys in 2013 and 2014 to identify resources were barely sufficient to provide baseline information to identify resources likely to be impacted for this DSEIS. A fairly robust monitoring and assessment protocol will need to be developed to track and evaluate the changes that are likely to occur to several important resources (including wetlands) when the preferred alternative actions are implemented. Monitoring during earlier phases of the SRS, including the 2012 Spillway Crest Raise would have helped to inform what temporal changes may occur with additional raises.

For some resources, 5 years of monitoring may not be long enough to detect changes (especially in the development of new wetlands due to the poor quality of the sediments in allowing vegetation to become established and the constant re-deposition of new sediments that delay the formation of soils). As a result, proposed mitigation actions, such as providing wetland plantings within the sediment plain would need to consider limitations of this landscape, such as, the lack of nutrients in the sediments and the amount of time it would take to establish vegetation in these developing areas. Additional measures, such as, augmentation of plantings with soil amendments may hasten planting success, though it is unclear when or where these plantings would occur.

There is need for additional discussions with resource agencies to provide details on these mitigation measures before the Final SEIS is issued. The project area landscape has many more constraints than most in trying to implement on-site measures and will require more effort to ensure success.

Recommendation: Engage with resource agencies, land managers, and the Cowlitz Tribe to develop a monitoring and management program for the project area.

Water Quality and Fish Habitat

Concern for high stream temperatures of affected tributaries and waters within the sediment plain have been voiced by the Cowlitz Tribe and others. As indicated in the DSEIS (pp. 3-21, 3-22) temperature exceedances have been recorded before, during, and after SRS construction at the Toutle River Hatchery on the Green River and on the North and South Forks of the Toutle River. The Lower Cowlitz River is also 303(d) listed for temperature. However, the DSEIS does not convey specific information regarding stream temperatures within the Upper NF Toutle River tributaries and sediment plain that have been and would be further affected by the SRS. Further monitoring work is needed to determine whether or not the pooling of water behind the SRS is exacerbating stream temperatures and habitat conditions for salmonids.

Recommendation: Provide further assessment and information regarding water temperature impacts due to ponding behind the SRS and resulting effects on 303(d) listed water bodies/water quality, ESA-listed fish and fish habitat.

Fish Passage, GBS and other Stabilization Structures

We appreciate the discussion of pilot grade building and stabilization structures in the DSEIS, which include the river diversion berm, the island-forming structures, and the cross-valley structure (pp. 3-60 to 3-62). It would be helpful to provide more information regarding these structures in the Final SEIS, such as, how long the various structures are likely to last, the potential impacts if the structures are removed or impaired by future raises of the Spillway Crest or the SRS, and to what extent the structures performed as intended. The Final SEIS should also provide more information regarding the GBS proposed for Phase 3 of the Preferred Alternative. This should include an explanation of why the GBS are being considered as the last step vs. being constructed between Phase 1 and 2 raisings of the Spillway Crest.

Recommendations:

- Provide additional information in the Final SEIS regarding the various pilot structures as discussed above.
- Explain why the GBS would be applied only in Phase 3 of the Preferred Alternative.

The DSEIS indicates that increased sediment deposition at Alder Creek and within the sediment plain associated with the Spillway Crest Raise #2 could affect upstream and downstream migration for ESA listed coho and steelhead (p. 4-87). The Grade Building Structures to be constructed in Phase 3 could potentially exacerbate these conditions for fish passage. It is important that the Corps carefully design, locate, monitor and adaptively manage any GBS or other structures to ensure that fish passage is not further impaired. If strategically placed, it may be possible to use GBS or other structures to help maintain or re-establish tributary channel definition/integrity to facilitate fish passage. Because Alder Creek and potentially Hoffstadt Creek channels would be impaired by sedimentation, it is also important to seek other tributaries that would be suitable for outplanting coho and steelhead.

Recommendations:

- As future GBS are designed and constructed, ensure that resulting sediment deposition would not impair channel integrity at the confluence of Hoffstadt Creek with the NF Toutle River.

- The potential sediment management structure at Alder Creek should be described in more detail and how it would be adaptively managed if monitoring showed that it wasn't maintaining the channel morphology needed in Alder Creek to enable fish passage.
- Provide more information regarding Deer Creek and its potential for use as a release site for fish from the FCF. Identify any other tributaries suitable for this purpose upstream of the SRS and the N-1 structure.

Climate Change

The DSEIS indicates (p. 3-8) that information regarding past floods was used to predict the probability and magnitude of future floods. We are concerned that use of past information may not adequately account for future conditions under a climate change scenario, which would likely increase the number, frequency, and magnitude of projected flood events. While the Corps states the predicted changes in climate conditions are not anticipated to occur prior to the project horizon of 2035 and cannot be accurately predicted at present (p. 4-103), it seems prudent to include a margin of safety to account for potential increases within the planning horizon.

Recommendation: Factor climate change trends into projections of the probability and magnitude of future floods, associated sediment movement, and deposition. Incorporate any needed modifications of projected outcomes when describing the environmental consequences of the proposed action in the Final SEIS for the MSH Long Term Sediment Management Plan.

As stated on page 2-12 for the SRS Raise Alternative, the sediment loading condition from the MSH debris avalanche is a major source of uncertainty. It follows that this uncertainty would apply to the other alternatives as well, but we have not noted any discussion of this with respect to projected environmental outcomes. This uncertainty would likely be magnified with incorporation of climate change projections and should be discussed in more detail wherever it applies in the SEIS.

Recommendation: Incorporate/discuss the uncertainty regarding sediment loading from the MSH debris avalanche in the analysis of each alternative of the Final SEIS.

Dredging and Sediment Quality

As Portland District USACE is aware, sediment characterizations for dredging projects in the Cowlitz River are conducted per interagency programs that include both Seattle and Portland Districts, the Dredged Material Management Program (DMMP), and the Portland Sediment Evaluation Team (PSET) respectively. Testing results are summarized in interagency Suitability Determinations or Memos. Characterizations of project sediments in and near the reaches likely to be dredged in the lower Cowlitz per this SEIS have been conducted relatively recently. Brief summaries of this information should be included in the Affected Environment Section 3.5.2.3 Lower Cowlitz River (Sediment/Substrate section), with the Suitability Determinations/Memos or original data reports included as references.

A brief review of the Seattle District website revealed the following Suitability Determinations (this may not be a complete list):

- Seattle District: Suitability Determination for the Longview Fibre Paper and Packaging (Kapstone Kraft paper Corporation) dated February 13, 2014. Conventionals such as grain size and TOC are included as well as dioxin. No Chemicals of Concern greater than Screening Levels were found.

- Portland District: PSET Memo for the Old Mouth of the Cowlitz River dated June 1, 2012. This memo is based on the "Old Mouth of the Cowlitz Sediment Evaluation Report" that reported data from an August 2011 survey, and references multiple previous characterizations performed by the Corps in this area. Again, conventionals are included and no COCs greater than SL were found.
- Seattle District: Suitability Determination regarding suitability of proposed dredged material from the City of Longview Regional Water Treatment Plant (NWS-2007-862) dated July 18, 2007. This Suitability Determination references the Portland District study of 10 sediment samples collected from the mouth to RM 10 on the Cowlitz. Sampling was conducted in January 2007, and resulted in a RSET review memo (this was pre-PSET formation) dated 27 April 2007 (revised 22 May 2007), written by Seattle District's Stephanie Stirling. The breadth and more details of this study should be provided in the SEIS.

Elevated chemistry does not appear to be a concern in general, though changed conditions such as spills, new information, etc. would factor into any future characterization.

The SEIS should acknowledge that future dredging would require coordination via the DMMP or PSET, depending on the project sponsor or applicant, as well as the specifics of the dredging and disposal proposed.

Recommendation: Incorporate the above information into the Final SEIS as appropriate.